# Position Details

## Canberra Deep Space Communications Complex

## Systems Engineer

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| The following information is for applicants |
| **Advertised Job Title** | Systems Engineer |
| **Job Reference** | 90878 |
| **Tenure** | Specified Term to July 2025, Full‐time (Part-time considered for the right candidate – min. 0.8 FTE) |
| **Salary Range** | SCP 1.1 – 2.4AU$72,658 ‐ AU$106,057pa (pro-rata for part-time) + 15.4% superannuation Tracking Station Allowance of $128.66/weekly (pro-rata for part-time) |
| **Location(s)** | Canberra Deep Space Communication Complex (CDSCC) Tidbinbilla ACT |
| **Relocation Assistance** | Will be provided to the successful candidate if required |
| **Applications are open to** | Australian Citizens |
| **Position reports to the** | Engineering Team Leader |
| **Client Focus – Internal** | 95% |
| **Client Focus – External** | 5% |
| **Number of Direct Reports** | 0 |
| **Enquire about this job** | Kevin.Boroczky@csiro.au  |
| **How to apply** | Apply online at <https://jobs.csiro.au/> Internal applicants please apply via **Jobs Central**If you experience difficulties when applying, please email careers.online@csiro.au or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The Systems Engineer will work within the Engineering team providing support to senior engineers in various tasks, including:

* Analysis of performance parameters for operational spacecraft passes;
* Installation, maintenance and troubleshooting of configuration controlled, operational hardware and software used for telemetry, tracking, commanding and monitoring of spacecraft;
* Performing operating system level tasks on Red Hat / Oracle Linux servers running on a secure network;
* Carrying out system level performance tests that encompasses RF paths, RF systems and signal processing as needed when systems are upgraded or when new systems are installed;
* Analyse and provide assessments from the data collated from system performance tests and from operational logs.
* As a team, collaborating to provide support in authorising access to the restricted airspace above CDSCC;
* Modify and update local analysis scripts to enhance CDSCC’s capabilities in these areas.

The role involves hands-on work utilising available test and operational equipment to gather data, followed by analysis to ensure the correct functioning of systems. Work will primarily focus on configuration-controlled systems, with changes subject to formal processes.

### Duties and Key Result Areas:

**Activities related to equipment installation in the Signal Processing Centre and on Antennas**

* Assist with the installation, modification or upgrades of various subsystems: downlink, receivers, uplink, system performance test, telemetry simulation and antenna calibration.
* Assist with integration testing of these subsystems where changes have been made.
* Assist with troubleshooting issues related to downlink and antenna pointing.
* Assist with the administration of configuration-controlled computers and equipment.

**Activities related to tracking performance**

* Assist with the gathering and processing of data that is available from logs and interpreting results.
* Assist with the measuring and analysing for system performance.
* Assist with activities for telemetry simulation.

**Activities related to airspace**

* Assist with supporting the management of the restricted airspace above CDSCC.
* Assist with the process for developing improvements to the available airspace monitoring and airspace planning tools.
* Under limited supervision, adapt techniques to meet special circumstances or undertake modifications to methods or equipment.
* Use discretion to decide which approaches are used and schedule own work around the availability of equipment.
* Communicate openly, effectively and respectfully with colleagues in the interests of good business practice, collaboration and enhancement of CSIRO’s and CDSCC’s reputations.
* Work collaboratively as part of a professional Engineering team to carry out tasks in support of CSIRO and CDSCC objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

**Working Relationships**

**External:**

* CSIRO – Regular
* JPL ‐ Indirect and regular
* Peraton – Indirect and regular
* NASA – Indirect and intermittent

**Internal:**

* Engineering Team Leader – Direct supervisor
* Staff within Engineering Team – Day to day
* Operations and Engineering Manager – Regular
* Other CDSCC Staff – Day to day

## **Selection Criteria**

#### Essential:

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A degree in Electrical/Electronic Engineering or equivalent.
2. Demonstrated knowledge of signal communications fundamentals.
3. Demonstrated knowledge of RF and analogue fundamentals including tertiary education subjects touching on electromagnetic fields, electrical circuit theory.
4. Strong attention to detail, with a proven ability to operate RF and signal analysis test equipment such as spectrum analysers, oscilloscopes, power meters, signal generators etc.
5. Demonstrated ability to interpret technical information, process data using software packages such as Matlab, LabView or similar, and to present results to peers.
6. A demonstrated ability to program in a scripting language such as Python or similar.
7. Demonstrated ‘user level’ familiarity with UNIX systems.
8. Strong interpersonal and team skills, including a demonstrated ability to liaise appropriately with technical colleagues, and work collaboratively to diagnose issues and enhance systems.
9. A current Australian Class ‘C’ driver’s licence (or equivalent).

## **Required Competencies**

* **Teamwork and Collaboration:** Proactively seeks and considers the ideas and opinions of others from within and outside the team to help form decisions, plans or actions.
* **Influence and Communication:** Puts forward ideas by presenting factual information supported by data, definitions, examples, illustrations or other aids, which will assist in conveying meaning.
* **Resource Management/Leadership:** Provides instruction and assists other staff to complete allocated tasks and activities.
* **Judgement and Problem Solving:** Identifies and considers the implications of a range of available alternatives in order to select the most appropriate response to problems of a familiar or recurring nature.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:**Willingness to change ideas or perceptions based on new information, contrary evidence or other people's points of view. Prepared to try out different approaches.

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* As this site works directly with NASA and JPL, the successful applicant will be required to obtain an Export Administration Regulations (EAR) clearance/approval, to perform the inherent requirements of the position.
* Applicants must hold a current Australia Class ‘C’ driver’s licence (or equivalent).

**Applicants must be able and willing to:**

* Attend after-hours callouts and provide scheduled out-of-normal-hours support on occasion, as required.
* Access stairs and ladders semi‐regularly, work at heights of up to 40m on antenna structures.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Space and Astronomy](https://www.csiro.au/en/about/people/business-units/Space-and-Astronomy) for more information.

CSIRO is a values‐based organisation. In your application and at interview you will need to

demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted

**About CDSCC**

The **Canberra Deep Space Communication Complex (CDSCC)** supports ground‐based spacecraft telecommunications as part of the worldwide Deep Space Network (DSN), under contractual arrangements between the National Aeronautic Space Administration (NASA) and the

Commonwealth Scientific Industrial Research Organisation (CSIRO). Visit [CDSCC Online](https://www.cdscc.nasa.gov/) for more information.

The **Operations and Engineering Section (OES)** hosts the operational staff and supporting technical expertise required to utilise the many systems located at CDSCC. OES responsibilities include the operational support of spacecraft and radio astronomy activities, and, the testing and calibration of systems. Under direction from the Jet Propulsion Laboratory (JPL), OES staff members may also undertake engineering development work in support of new capabilities to be delivered to the wider DSN.

Within OES, the **Engineering team** provides a diverse range of specialist technical skills with application across much of the site. These skills include an overall Systems Engineering capability with expertise in radio frequency, digital systems, system calibration and performance determination, radio astronomy support and operational software administration and development. The team provides the technical expertise needed to support operations staff in their activities, undertakes targeted development work and assists other CDSCC sections as needed.

Within the **Operations & Engineering** group, the **Engineering** team provides engineering support for a diverse range of RF and Data Systems across the Operations & Engineering team. This may include support or development for hardware and software systems as well as data system administration services. The Engineering team also supports end to end system performance testing and evaluation.